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(54) Electric toaster

(57) An electric toaster comprises a toasting chamber (14) which possesses radiant heaters (44, 48), reflectors (30, 44) of sheet metal and protective gratings (34, 40). At least one reflector (30 or 44) and at least one protective grating (34 or 40) are made in one piece from sheet metal, the apertures for the grating being punched out from the sheet. The reflectors may have integrally formed bottom plates provided with ventilation slits which facilitate the discharge of crumbs from the chamber.

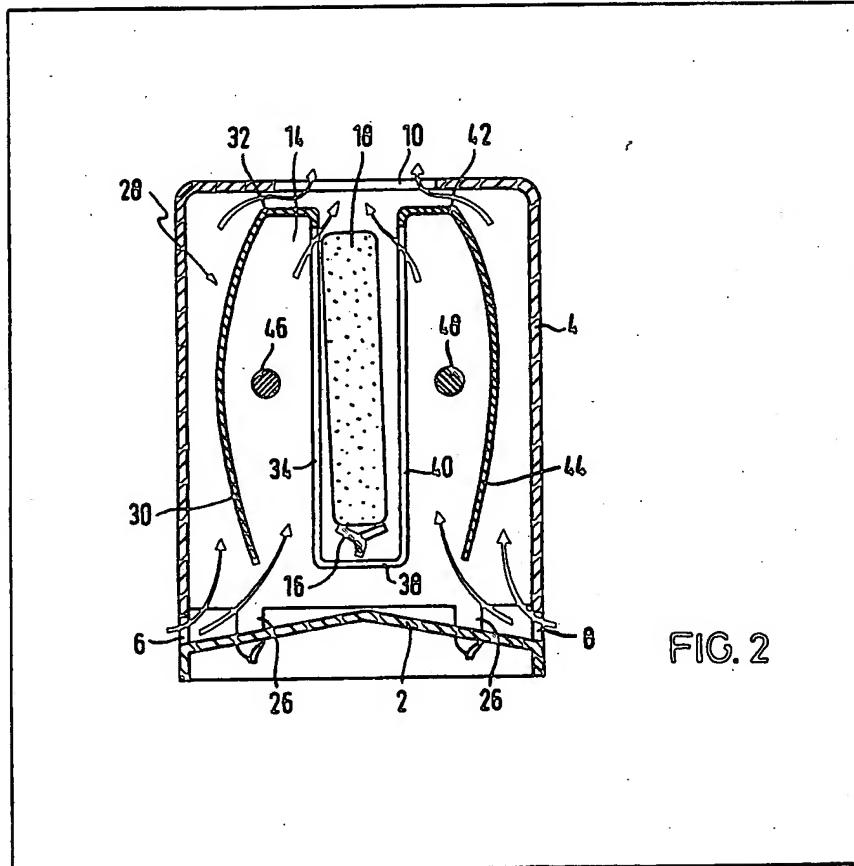


FIG. 2

FIG. 1

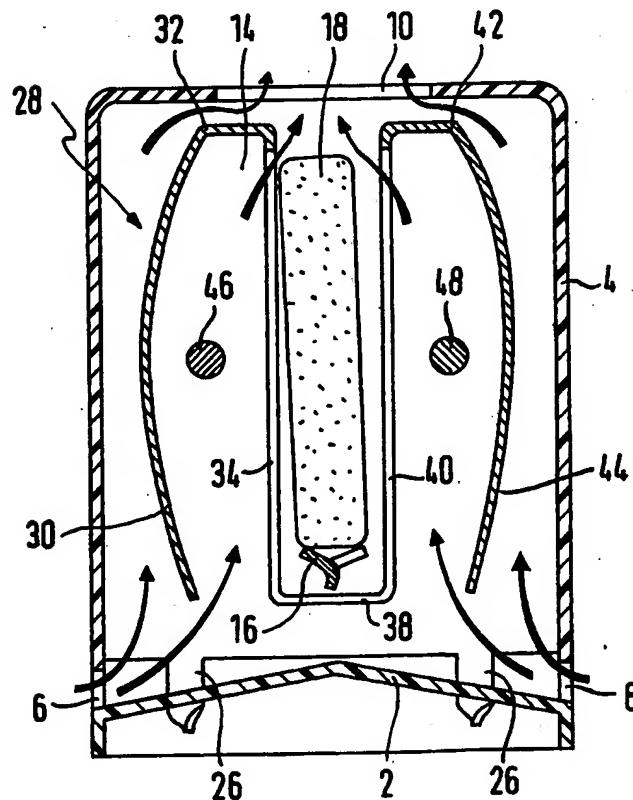
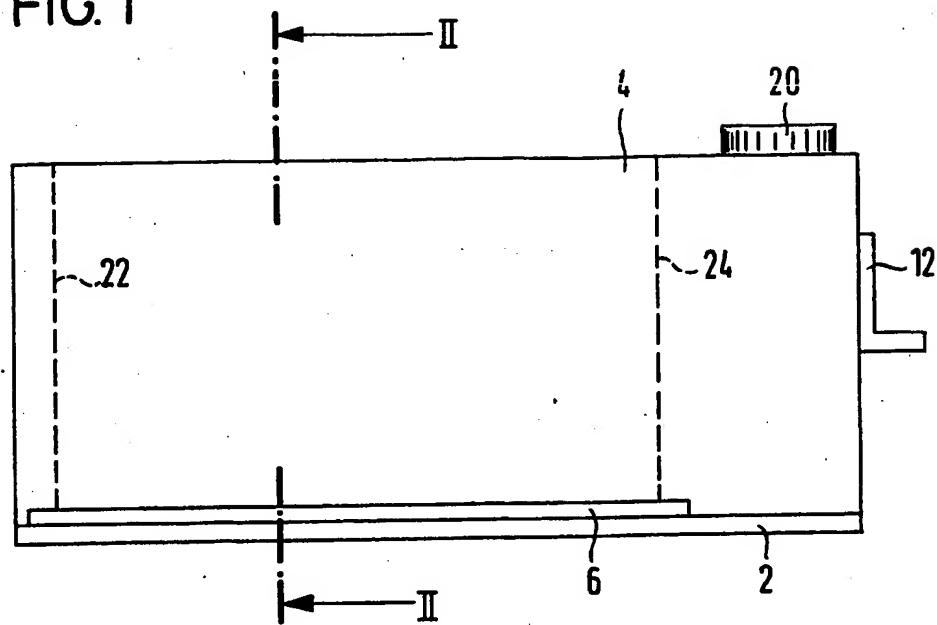


FIG. 2

FIG. 3

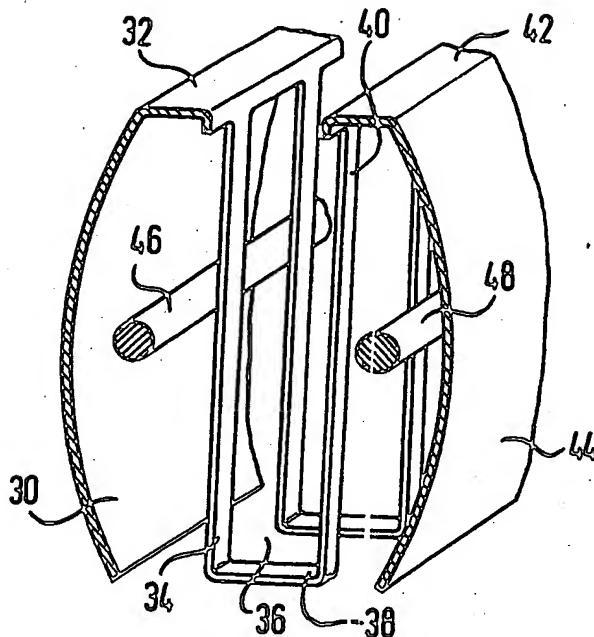


FIG. 6

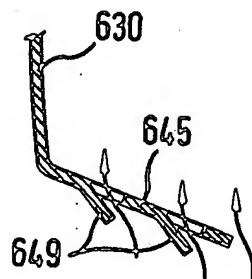


FIG. 4

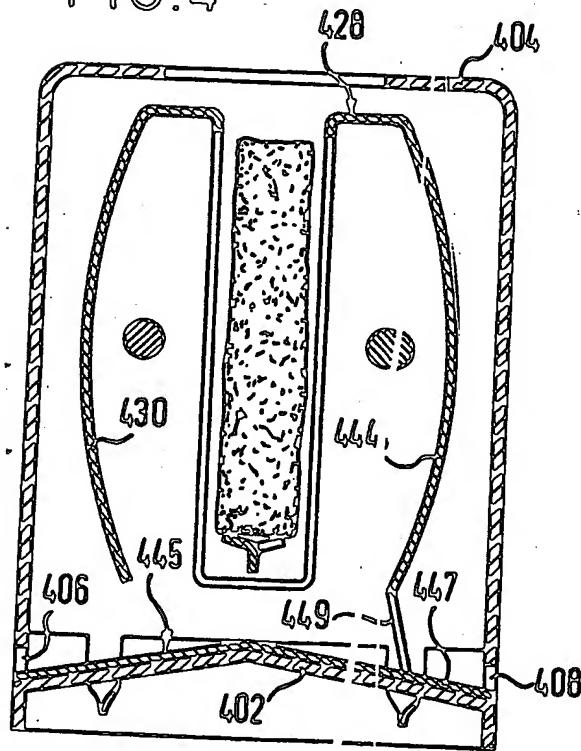
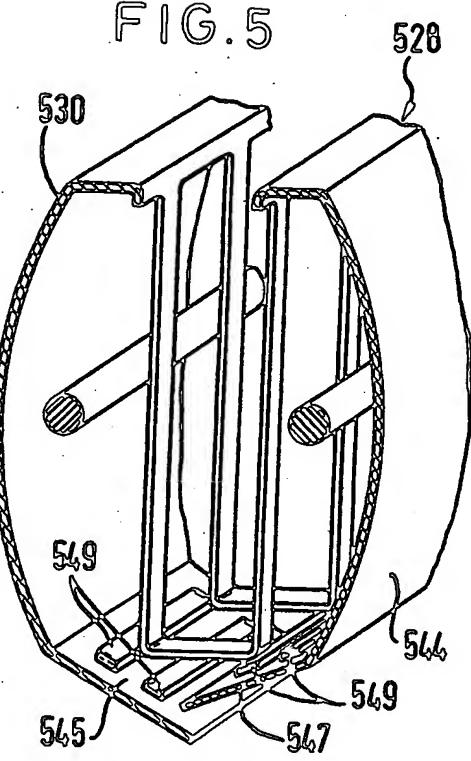


FIG. 5



SPECIFICATION

Electric toaster

5 The present invention relates to an electric toaster and has particular reference to a toaster comprising a toasting chamber with radiant heating means, reflectors and protective gratings.

10 Such an electric toaster is known from, for example DE-AS 11 01 716. In this case two reflectors each consist of separate portions of metal sheet. The protective gratings are constructed as wire structures and are fixed to the upper ends of the reflectors. This construction has the disadvantage that a number of components have to be separately installed, which implies high production cost and, due to the expansions and contractions of the components as they heat up and cool down, noise can be produced at the connection points between the reflectors and the protective gratings.

According to the present invention there is 25 provided an electric toaster comprising a housing provided with a toasting chamber, radiant heating means associated with the chamber, and a respective thermal reflector and respective protective grating arranged at 30 each of two opposite sides of the chamber, the reflector and grating at at least one side being integrally constructed from a metallic sheet provided with apertures to form the grating.

35 A toaster embodying this invention has the advantage that the integrally formed reflector and the associated protective grating cannot move relative to each other and that thermal expansion therefore cannot lead to the production of noise at this point.

40 Advantageously, the oppositely situated reflectors of a toasting chamber and the protective gratings situated therebetween may be made from one piece, with the consequence of reduced installation cost and further increase in the stability of the structure.

45 Embodiments of the present invention will now be more particularly described by way of example, with reference to the accompanying drawings in which:

50 *Figure 1* is a schematic side view of an electric toaster according to a first embodiment of the invention;

55 *Figure 2* is a cross-section substantially along the line II-II of Fig. 1;

60 *Figure 3* is a perspective view of part of the reflectors, gratings and heaters of the toaster of Figs. 1 and 2;

65 *Figure 4* is a view similar to Fig. 2 but of a toaster according to a second embodiment of the invention;

70 *Figure 5* is a view similar to Fig. 3 but of a toaster according to a third embodiment of the invention, and

75 *Figure 6* is a sectional detail of a portion of

a floor of a reflector of the toaster of Fig. 5, according to a modification.

Referring now to the drawings, there is shown a toaster comprising a roof-shaped 70 base plate 2 of plastics material serving as a crumb chute. Mounted on the base plate 2 is a shell-shaped casing 4 with lateral, lower air inlet slits 6 and 8 and an upper bread inlet and discharge slit 10. A lifting lever 12

75 mounted in the casing 4 serves to actuate a bread carrier 16, disposed in a toasting chamber 14, for slices 18. An adjustment knob 20 serves for setting the toasting period at a control (not shown). Inside the casing 4 there 80 extend transverse walls 22 and 24 of sheet metal bounding the ends of the toasting chamber 14, these walls being fixed to the base plate 2 by means of integral lugs 26.

A reflector-protective grating assembly 28, 85 made from one piece of sheet metal, is fixed by means of sheet metal lugs (not shown) to the walls 22 and 24. The assembly 28 is generally M-shaped in cross-section and includes a curved reflector 30 connected at its 90 upper end via a connecting web 32 with the upper end of a free arm 34 of a U-shaped protective grating. Apertures 36 of the protective grating are punched out from the sheet metal and also extend through a lower transverse web 38 of the U-profile, to permit crumbs to fall through. The upper end of the other free arm 40 of the grating is connected via an upper transverse web 42 with the upper end of a second curved reflector 44.

95 Between the reflectors 30 and 44, respectively, and the protective gratings 34 and 40, respectively, there are arranged electrical heating bars 46 and 48, respectively, acting as a radiant heater and supported by the walls 22 100 and 24.

105 In a modification of the illustrated embodiment, the lower ends of the reflectors 30 and 44 may be lengthened and brought closer together in order to better protect the plastics 110 base plate 2 against radiation from the heating bars 46 and 48. In this connection account should be taken of the fact that firstly crumbs falling from the bread must slide out at the bottom and secondly adequate through 115 ventilation of the toasting chamber 14 with air supplied through the ventilating slits 6 and 8 must be provided.

120 The air flows are indicated by arrows in Fig. 2.

125 *Fig. 4*, shows, in section corresponding to that of *Fig. 2*, an embodiment comprising a roof-shaped base plate 402 of plastics material, on which is mounted a shell-shaped casing 404 with lateral, lower air inlet slits 406 and 408. A reflector-protective grating assembly 428, made from one piece of sheet metal, is inserted therein and includes two reflectors 430 and 444 which bound the toasting chamber at the sides. With the right-hand 130 reflector 444 there is integrally formed a roof-

shaped bottom plate 445 resting on the base plate 402. In order to shield the base plate 402 as far as possible from thermal radiation to the right of the reflector 444 as well, sheet 5 metal lugs 447 are punched out from the transition point between reflector and bottom plate and, when the bottom plate as a whole is bent over relative to the reflector, the lugs are left in the same plane as the bottom plate.

10 As a result, on the one hand the base plate 402 is largely shielded from direct radiation and on the other hand air flow apertures 449 for ventilating the toasting chamber are produced in the assembly 428.

15 Fig. 5 shows a further embodiment with a reflector-protective grating assembly 528, in which bottom plates 545 and 547 extend obliquely downwards from the two reflectors 530 and 544 respectively. The bottom plate 20 545 extends, in the central region of the assembly, somewhat lower than the bottom plate 547 and a short way below the latter in order to prevent the passage of radiation through the central region, but nevertheless to 25 permit crumbs to pass between the plates punched out of the two bottom plates 545 and 547 are roofed-over ventilation slits 549, which additionally permit air to flow into the toasting chamber and largely prevent the incidence of radiation onto the base plate of 30 plastics material.

Fig. 6 shows a modification of the embodiment of Fig. 5, in which a bottom plate 645 has downwardly stamped-out ventilation slits 35 649, which facilitate the discharge of crumbs from the toasting chamber.

CLAIMS

1. An electric toaster comprising a housing provided with a toasting chamber, radiant heating means associated with the chamber, and a respective thermal reflector and respective protective grating arranged at each of two opposite sides of the chamber, the reflector 40 and grating at at least one side being integrally constructed from a metallic sheet provided with apertures to form the grating.
2. A toaster as claimed in claim 1, wherein the reflector and grating at each side 45 of the chamber are constructed integrally with the reflector and grating at the respective other side, the gratings being disposed between the reflectors.
3. A toaster as claimed in either claim 1 50 or claim 2, wherein at least one of the reflectors is integrally formed with a floor closing the base of the chamber.
4. A toaster as claimed in claim 3, wherein said one reflector is provided in the 55 region of the floor with air inlet means formed by lugs punched out of the constituent sheet of the reflector and bent over to extend generally horizontally.
5. A toaster as claimed in claim 4, 60 wherein the lugs are bent to extend in the 65 plane of the floor.

6. A toaster as claimed in any one of claims 3 to 5, wherein the floor is inclined so as to provide a chute for crumbs, outlet 70 apertures being provided for egress of such crumbs.

7. An electric toaster substantially as hereinbefore described with reference to Figs. 1 to 3 or any one of Figs. 4 to 6 of the accompanying drawings.

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